THE HAWAIIAN PLANTERS' MONTHLY

PUBLISHED FOR THE

HAWAIIAN SUGAR PLANTERS' ASSOCIATION.

Vol. XX] HONOLULU, OCTOBER 15, 1901 [No. 10

NEW YORK, Oct. 5.—A slow market and without change, other than a reduction of 1-32c in molasses sugar. Centrifugals steady at 3¾ for 96 test. In Europe, beet sugar dull and lower. Licht's latest estimate of European beet sugar production, 6,050,000 tons, against 5,518,048 tons campaign of 1899-1900. Willett & Gray's estimate of the United States outturn is 76,859 tons, and of total sugar crops of the world 9,581,81 tons—an increase over 1899-1900 of 1,123,848 tons. Refined quiet and list unchanged. The American Sugar Refining Company has issued the following: "On September 30 guarantees cease. This will be applicable to all sugars, whether in transit or otherwise. Such sugar after that date takes the price sold at, regardless of market conditions. This does not affect manufacturers' contracts."

Regarding the effect of low prices on the Cuban sugar industry, Willett & Gray's Statistical says: "All quotations for raw sugars everywhere are now conceded to be at or below cost of production, but whether this fact will tend to lessen the sugar production anywhere remains to be seen. Crops now well under way will, of course, be made. The Cuba crop is the one largest subject of the present untoward conditions, and many estates may be forced to abandon grinding if present prices continue. The condition of the island is already deplorable, and extending worse conditions over the next season will be more so. Hence it is absolutely essential and indispensable that our next Congress shall take up the question with energy and despatch of making sugars of Cuba free of duty, already done for Porto Rico. There is no other outcome practicable for the relief of Cuba, now under United States protection, either with or without annexation."

COMMITTEES OF THE HAWAIIAN SUGAR PLANTERS' ASSOCIATION.

The following is a list of the Committees which have been appointed for the year ending November, 1901:

Cultivation—Henry P. Baldwin, chairman; John A. Scott, John Hind, Geo. F. Renton, L. Barkhausen.

Manufacture—E. E. Olding, chairman; W. W. Goodale, Geo. Fairchild, C. C. Kennedy, A. Ahrens.

Fertilization—C. F. Eckart, chairman; C. M. Walton, F. T. Crowley, Geo. Ross, Jas Watt.

Machinery—C. Hedemann, Chairman; Jas. A. Low, Geo. C. Hewett, W. W. Goodale, W. Stoddard.

Diseases of Cane—Prof. Koebele, chairman; F. Weber, Hy. Deacon, W. A. Baldwin, Fred. Meyer.

Labor—F. M. Swanzy, chairman; E. F. Bishop, J. P. Cooke, E. D. Tenney, H. A. Isenberg.

Forestry—D. Forbes, chairman; F. B. McStocker, J. Gibbs, H. A. Baldwin, T. S. Kay.

Handling and Transportation of Cane—Jas. A. Low, chairman; J. M. Horner, John T. Moir, Geo. R. Ewart, K. S. Gjerdrum.

Experimental Station—C. F. Eckart, chairman; J. P. Cooke, W. M. Giffard, Geo. N. Wilcox, A. Ahrens.

———:o:———

While the weather in this vicinity and throughout the eastern and central Pacific has been mild, with very little rainfall, the reverse has been the case in the Atlantic. An item from Barbados states: "Yesterday closed three months of the stormiest weather and of the heaviest precipitation on record in Barbados. Since June 1st, six hurricanes have passed close to, or have actually touched, the island. For the three months ending August 31st, the rainfall at this place has been 48.07 inches. The central highlands have had well over 60 inches in the same time. In the first five months of the year the fall was 8.83 inches, of which 2 inches fell during the last week in May."

"It is not impossible," as the British Consul states, "that Cuba will succeed in producing so much sugar and at so low a price as to revolutionize the European markets. But in

order to go so far, it is most necessary, first, that the American market be open to Cuba in a more liberal way, and then it may happen that the business will be for the benefit, not of Cuba alone, but of the United States also, because the sugar exported to Europe would be sugar produced in the island, but refined in America, and the American capitalists would have the control of an article of universal consumption."

Secretary Wilson, of the United States Department of Agriculture, claims that the sugar beet stands the drouth better than any other vegetable. The reason is that the long, tap root goes deeply into the earth, drawing up the moisture from the subsoil. For this reason Secretary Wilson advises the Nebraska farmers to raise more sugar beets. He says: "There is not a farmer in Nebraska doing anything as profitable as the raising of sugar beets would be if the pulp were fed to dairy cattle and the sugar sold to factories."

Our acting Governor is a smoker but a very moderate one. He evidently believes also that when a man has work to do he should do it—and not smoke. Most people will see the reasonableness of His Excellency's request that none of the officials in the Government service should smoke during office hours. Their working day is not so long that any one need suffer undue hardship from abstention from a whiff during official hours; if any civil servant should feel it an unbearable sacrifice I should certainly say it is time that man consulted his medical adviser.—Dem. Argosy.

Death of Mrs. Coan.—The friends of Dr. and Mrs. Titus Munson Coan who did not know of their domestic infelicity, will learn with astonishment that Mrs. Coan, who died two months ago, left a will, dated in 1897, by which she cut off her husband from all share in her property. This will has been filed for probate, and the testatrix divides here estate equally between her two sons, Philip Munson Coan, who attained his majority not long ago, and Hamilton L. Coan, a minor. Through the filing of this will it became known for the first time that Dr. and Mrs. Coan had been separated for several years before her death. Dr. Coan ranks high among the literary circles of America, and is also well known as a lecturer. He is prominent socially, as was his wife.—N. Y. paper.

HAWAIIAN POSTAL STAMPS.—A very interesting meeting of the Boston Philatelic Society was held recently, when there was an exhibition of Hawaiian stamps from the period of their earliest adoption in the Sandwich Islands in 1853 to the present time. About a dozen individual collections were displayed, and one individual exhibit, that of Henry J. Crocker, needs only one stamp to complete it. This particular stamp that is so difficult to find is an early and exceedingly primitive "two-center." It was only the other day that a specimen of this much-wanted stamp was sold in Boston for $3,100 and carried away. Down to the time of the revolution in 1893 the issues all bear portraits of the sovereign during whose reigns they were used, or of members of the royal family closely related to the succession. C. A. Brown of Honolulu was present last evening as was also G. D. Gilman, for about half a century Hawaiian consul in this city. Mr. Crocker's exhibit received the silver medal, the highest prize of the evening, while the relative excellence of the exhibits of F. M. Crehore and M. H. Lombard constituted a tie, and won for each a bronze medal.—Boston Herald.

SEA ISLAND COTTON.—There is a great demand for Sea Island Cotton, and though the last year's crop in the United States was about 100,000 bales, it did not prove sufficient for the increasing demand. Large quantities are now used for mercerized yarns. This cotton is also very much in demand for making high class goods. During the war of the rebellion, the editor encouraged the sea-island cotton industry in these islands, and for several years it was largely cultivated here—being generously encouraged by premiums,—chiefly along the Kona coast of Hawaii. The native growers became, however, careless in planting the seed, and consequently the staple soon degenerated into short staple cotton, and lost the value which the pure sea island cotton possesses. The high freight then charged for conveyance from Honolulu to New York was another drawback, and after five or six years, its cultivation on these islands was abandoned. Those engaged in the cultivation of Sea Island cotton in the southern states are extremely careful regarding the seed and the care of the staple when being ginned and baled. Its cultivation has been tried in various parts of the world, but nowhere has such fine, glossy and

strong staple been produced as on the sandy shores and islets of North and South Carolina. Some of the product of those islands is equal to the finest silk and almost as valuable. It is generally put up in small bales and not pressed so compactly as the upland cotton is, in order to preserve its quality of strength. The writer doubts whether, under the most favorable circumstances, sea island cotton can be produced here, that will compete with that of South Carolina, or even pay expenses.

———:o:———

THE CANE SUGAR INDUSTRY OF AUSTRALIA.

We have received from Dr. Maxwell a copy of his report on the sugar industry of Queensland, a pamphlet of sixteen pages folio size, the last three pages being devoted to the sugar industry of New South Wales, these being the only two states or provinces in which this industry is established. "The Australian cane sugar-growing states," he says, "present conditions of the industry, which, at least in a degree, distinguish them from other cane sugar-producing countries. The growing of cane by small farmers is found, to a small extent, in Louisiana; to a very much smaller extent in the Hawaiian Islands; and likewise in some other lands. The system, however, which most generally and in certain countries wholly obtains is that of the 'plantation,' where large areas lie contiguous to the mills, and the growing and the manufacturing are one concern, represented by the white capitalist and his staff of officers on the one hand, and subject, frequently, to cheap labor on the other. A similar situation obtained in Queensland in the earlier history of sugar-growing. The previous large estates, however, have recently, and more particularly since the inauguration of the Government Central Mill system, become divided up into small farms, which have been rented or sold to canegrowers. This great change has brought about a condition of things which is unique, and, in a large measure, peculiar to the Australian cane-sugar states. There are 2,610 canegrowers in the State of Queensland, with an average area, per grower, under sugar-cane of 42.6 acres."

* * * "At the present time the labor power furnished by the canegrowers, themselves, and by their families, is utterly inadequate to produce the bulk of cane demanded by the mills

to keep them in operation. Hired labor is therefore engaged to supplement the work of the growers; and not only are the few remaining large planters employers of such labor, but most of the farmers pay wages to several hired hands. The labor employed embraces Europeans, chiefly of the Anglo-Saxon race; and other races, including the Asiatic, the Hindoo, and the Polynesian. The great majority of the alien laborers engaged in Queensland belong to the South Sea Island tribes.

"By reason of a legislative enactment, known as the Pacific Island Laborers Act, the white laborer in Queensland holds a unique and relatively protected position. In the citation of kinds of labor which the South Sea Islander may perform, the positions of "engineers, engine-drivers, engine-fitters, blacksmiths, wheelwrights, farriers, sugar-boilers, carpenters, sawyers, splitters, fencers, bullock-drivers, mechanics, grooms or coachmen, wagoners, or household servants" are not included, all these several kinds of employment being reserved for the selection of the white laborer.

"While the white laborer is protected in the exclusive enjoyment of the kinds of occupation set forth in the said Act, he of course is not debarred from the lines of work allowed to the Pacific Islander. As a matter of fact, the white laborer is engaged in some kinds of field work, but more chiefly in such as are performed by use of implements, and command a higher rate of compensation, and from which the Pacific Islander is debarred."

"Next in significance to the social environment which results from this extensive white settlement, its effects upon the demand for and supply of labor are the most noteworthy. Those thousands of small farmers, into whose hands the occupancy of the lands has fallen, are not only the owners or tenants, they are also settled white laborers, with this vital distinction—that they and their families are engaged in cultivating their own lands for their own direct gain. As laborers, working for hire, many of those settlers would never have been found on the soil; but as free men, with a personal interest in the occupancy of the lands, they are the hardest performers of given kinds of work in the field; and by their labor they have already, to a very notable extent, modified the ex-

clusive employment of subject labor, and in localities where hitherto the white laborer had hardly been found. As a result of this white settlement, the following table sets forth a decrease in the number of Pacific Islanders employed, yet a simultaneous expansion in the sugar production:

Year.	Acres of Cane Crushed.	Tons of Sugar Made.	Pacific Islanders in Queensland.
1885.	38,557	55,796	10,755
1890.	40,208	68,924	9,689
1899.	79,435	123,289	8,826

"If the present natural course of white settlement is not interrupted by any untoward economic changes, there is no apparent ground for considering that it will not go on. There is abundant room for more men and families upon the areas suitable for cane culture and contiguous to manufacturing centres. There would be advantage in locating more growers upon the areas already occupied, if new applicants for such land came to hand; and the lessening of the acreages controlled by the present occupants should lead to a higher producing power of the soils, and to a still further measure of substitution of white labor for the subject labor at present in the fields.

"It is of paramount importance, however, at this place to understand that denser settlement is not possible at a quicker rate than is determined by the further available men who are ready for occupation of the lands. It is also of allied importance to realize that the present production of the lands, centering round the respective sugar-mills, cannot be maintained unless the present sum of labor power, in some form, is kept up. To reduce the present equivalent of labor power will be to reduce the current weight of cane produced, and to cut down, below a given minimum, the bulk of available cane is to stop the mills; for they cannot operate and meet the bare expense of running, unless a given tonnage of cane passes the rollers, and a given minimum of sugar is made."

Several pages of the Doctor's report following these extracts are devoted to laborers, the sources of supply, cost, etc., which are not of special interest abroad. Regarding the unreliability of many of the laborers, the report says:

"In treating of stability in the performance of work, it is

found that the question is in very intricate relation to the preceding one—personal endurance of work. The white labor on plantations, as it has already been made apparent, has to be divided into two classes—viz., the permanent hands, who are employed the year round, as team men in the fields, and as skilled workers in the mills. The men of this class are usually "picked men," of good habits and good health constitutionally; and they are engaged in the kinds of work reserved for white labor, and are compensated accordingly. In the main it is found that these permanent white hands remain in their positions, and are generally stable in the performance of work where the conditions of nature allow of continuous labor. The second class of white hands is required only during given seasons of the year—in the field during the cutting of the cane, where this may be partly done by white men; and in the mills during the crushing season. It is thus seen that the employment is not permanent, and that the class of laborers required for the season's work are not permanent, and in that sense they are not stable, and instability amongst that class becomes a part of their conditions. The facts go to show that there is a notable measure of unreliability amongst the class of men that are taken on for special seasons. * * *

The results reached after investigating the economic situation existing in Queensland, and the relative cost and efficiency of the respective kinds of labor, correspond to the findings in other countries. In Louisiana the negro is the field laborer in the hot months, and has the highest value; but in the winter months, when very low temperatures are reached, the Italian laborer goes into the field for cane harvesting. In the winter, the negro loses in labor efficiency, due to his sensitiveness to cold and to his native repugnance to work during the cold months, when the labor of the Italian becomes more possible. The Hon. John Dymond states, in answer to some questions, "The Italian does good work during the cool months, and earns as far as one and three-fourths dollars (7s. 4d.) per day, by contract, in cutting and loading cane."

In certain sugar-producing countries, notably some growing cane sugar, crude methods of management in the field and in the mills are combined with low rates of compensation for labor. In other sugar countries, notably those engaged in

producing sugar from the beet-root, a low rate of wage is associated with the highest scientific knowledge and skill in the management, both in the field and in the factory. In Queensland, a condition of agriculture so crude as to have led to the relative exhaustion of the soils is combined with a rate of compensation for field labor which has no parallel in any other sugar-growing country. It has been shown that white field labor, engaged in sugar-growing in this State, receives 5s. 2d. per day, which is notably in excess of the average compensation of white labor in any other country. Even the Pacific Islander in this country receives a sum total of compensation which places him upon a higher level than the white races who are furnishing labor in the beetfields of Europe. Most noteworthy and claiming repetition is the circumstance that Germany, France, Austria, Belgium, Holland, and Russia, which are producing three-fifths of the world's sugar, are growing that sugar with a labor power which, expressed by the factor of daily wage, does not cost more in average than one-third of the amount paid to white field labor, and to two-thirds of the sum paid to the Pacific Islander in Queensland. These facts represent the situation of the Australian sugar-producing States to be highly adverse, and especially when it is understood that those countries which are growing sugar by aid of cheap labor, combined with the highest directive skill, are specially aided by their Governments in competing with other countries in the export and sale of their sugars. These matters do not necessarily come within the scope of this report, but their acute bearing upon the economic situation of the industry in Australia demands that they shall be adequately considered and assessed in any legislative scheme in which the protection of the home industry is involved.

Mechanical Aids in Producing the Cane Crop.—In growing and harvesting the cane crop, many of the acts of labor are relatively light, and are agreeable to perform. These comprise plowing, and the attendant acts of cultivation to prepare the land for planting, and the cultivation and cleaning of the cane during growth by means of implements worked by horse-power. These acts of labor are not only capable of being performed by white men; they are reserved for them exclusively

by the provisions of the Polynesian Laborers Act. It requires to be said, in full explanation of the situation, that, although the said Act appoints such kinds of labor for the white laborer, they are not exclusively reserved to him. In this, and in other, the provisions of the Act have been and are being violated, but to a decidedly limited extent. The Act stipulates that food, clothing, and medical care shall be provided for all Pacific Island laborers. In general that provision is complied and most amply complied with; but that has not rendered impossible given cases of violation of the Act, and certain of them of a reputed flagrant character. The situation remains, however, that the personal state of the islander upon the plantations and cane farms is strongly satisfactory in general; and it is incumbent upon the authorities in charge of the administration of the Act to see that its provisions are rigidly carried out. If there were no better reason, it is reason enough that the existence of the Act may depend upon a full compliance with its provisions.

In addition to the kinds of work reserved for the performance of the white laborer, there are other acts of labor belonging to the production of the cane crop, and equally as necessary as the foregoing, but which the white laborer has shown a disgust for, and frequently declared his inability to perform. These are hand-weeding, trashing, and cutting of the cane. These acts of field work have been and are being done by the Pacific Islander and other subject races.

For other reasons, as well as the consideration of economy, attempts are being made to mature a mechanical device for the cutting of sugar-cane. The trashing of cane, although imperatively necessary in many districts, and most so in those conditions of climate where the white laborer is the least able to perform it, can be, and unfortunately is, being neglected, yet at a great cost in the quality of the cane juice. But the cane must be cut when it is grown and gotten to the mill; and for such reason invention is at work trying to furnish an instrument or a machine which will do the work in the hands of, and under the direction of skilled labor. If this end should be attained then cane-cutting will become an act of skilled labor, the actual work being performed by a mechanical agent in the hands of the laborer.

At this time there are six different devices, by as many persons, which have been submitted to the Sugar Department of the Queensland Government for consideration. The author of one of these is at this time in the United States of America seeking facilities for the making, perfecting, and testing of his device. Two others are endeavoring to mature their schemes in this country, and to get them tested. The Queensland Government, through its Bureau of Sugar Experiment Stations, is interesting itself in and giving encouragement to the authors and promoters of these schemes and devices. It is not possible at this date, however, to indicate whether, or within what definite period of time, any device will be forthcoming that will meet the specific need, and render the cutting of cane an act of skilled labor, and bring it within the competence of the white laborer. The indications are that invention will eventually be equal to the need, and that a mechanical device will be matured; but it will be going utterly beyond the present condition of progress in the matter, and unjustifiable, to attempt to say within what length of time this end will be achieved. * * *

The special causes of the great decline in the yielding power of the soils are at this time the subject of a systematic investigation by the Sugar Experiment Stations of Queensland, an institution which may be taken to represent a new departure, and a purpose to introduce and follow the most modern scientific methods in sugar production. An indication of those causes is furnished by the following table of analytical results, showing the amounts of certain chemical elements in the virgin soils, and the relative amounts in the same soils which have been producing cane for many successive years without making good again the constituents that were removed from the soils by cropping.

EXHAUSTION OF THE SOILS.

Elements.	Contained in the Virgin Soils per Acre.	Contained in the Cropped Soils per Acre.	Loss of Elements per Acre.
	Lb.	Lb.	Per Cent.
Lime	3,747	2,538	37.2
Potash	747	432	42.2
Nitrogen	4,650	3,240	31.0

These data, which are furnished by the methods of the laboratory, set forth very concisely the precise causes of the weakened producing power of the soils. The scientist, specially, will see the significance of the data. It is not only that a vast percentage of actual food elements has been lost, but that it is particularly that proportion which was most available for the instant demands of the crop. It is by no means to be deduced that the native fertility of the cane soils has been permanently destroyed. Their immediate yielding power has been seriously impaired, but by more modern methods of cultivation, rendering available the reserve stores of plant food, and by returning to the lands those elements which have been, and are being, removed, the producing power of the soils can be restored. Time, however, will be absolutely essential to that end, and also the assured freedom of the farmer from any embarrassments which could result from interference with the agencies by which he is carrying on his work.

The results in the main of the more recent years, and the conditions of the present time, indicate that the maintenance and the greater expansion of sugar production in Queensland will depend upon placing a greater number of cane-growers upon the sugar-producing areas. Reduced acreages in the hands of the individual settlers will render more thorough cultivation of the ground, and care of the crop, and a consequent larger yield per acre possible, and possible by means of the labor of an increased proportion of white men and a diminishing proportion of other kinds of laborers. This result is seen to be working itself out in the history of the past recent years. In 1885, the number of white farmers growing cane was relatively fractional; but the number of Pacific Islanders in the colony was 10,755, and the sugar produced was 55,796 tons. In 1899, as has already been stated, the number of white cane-growers in Queensland was 2,610, with the production of sugar increased to 123,289 tons and the number of Pacific Islanders reduced to 8,826.. The actual reduction in the number of islanders is 1,929, but the relative reduction is not less than 60 per cent from what it was in 1885, when the production of sugar at these respective periods is considered. The logical indications of the situation are that the South Sea Islander is a declining factor in sugar production in Queensland, and that the decline is due to a natural operating law, by reason of

which the lower is being gradually substituted by a higher form, and by a higher standard of producing agencies in those locations where the laws or conditions of nature, such as climate, do not operate in the opposite direction. This law may be expected to continue to operate, and with continued and increasing results, providing it is not checked through any device by which it may be sought to hasten the rate of movement of natural law.

QUEENSLAND SUGAR CROP.—The report of the Registrar-General gives the sugar crop of Queensland for 1900 as 92,554 tons. This volume of sugar resulted from the crushing of cane from 72,651 acres, and shows a yield of 1.27 tons of sugar per acre. The total result of 1900 was very low, the falling off in crop and yield being due to extreme drought. A statement of the volume of the respective crops of the years 1897-1900 will be opportune at this place.

Year.	Acres Crushed.	Volume of Sugar. Tons.	Yield per Acre. Tons.
1897	65,432	97,916	1.49
1898	82,391	163,734	1.98
1899	79,435	123,289	1.55
1900	72,651	92,554	1.27

The report of Dr. Maxwell makes it very clear that the condition of the soil in Queensland needed the service of an expert, when the last crop for the entire state of Queensland amounted to only 92,554 tons, giving an average yield of about one and a quarter tons (1.27) per acre for the entire state. The Doctor certainly has a good field for investigation and for applying the needed remedy, which will prove effectual if he is aided and supported by those who are interested in the growth and expansion of the sugar industry. We fervently trust he will be.

Dr. Maxwell's report is a studied, and so far as is possible under the circumstances, a convincing argument in favor of the introduction and employment of South Sea Island labor for sugar cane cultivation. The Queensland premier, Mr. Philp, in commenting on the report, thought it a very fair statement, and that "it proved conclusively that we must have colored labor in North Queensland to successfully grow sugar. Queensland could do with less colored labor than any other

sugar-growing country, but it seemed to him we must have some. If the Federal Parliament wished to deal fairly with Queensland, the report must convince them that the industry was one that must be dealt with very tenderly. They had been trying for 35 years to solve the question of labor, and he did not see how it was possible for Mr. Barton to solve it to the satisfaction of everybody, especially those interested in the industry, in three months. In support of the value of the report Mr. Philp pointed out that Dr. Maxwell has had considerable experience in other sugar countries."

———:o:———

EXTERMINATE THE MOSQUITOES.

That the mosquito is a pestiferous little insect, a public nuisance, is a fact that no one will gainsay. It was not until within a few years, however, that it was suspected of being a disease breeder, but the results which have been attained in Havana in the way of suppression of yellow fever by the suppressing or annihilation of the mosquitoes is ample evidence that this little insect is not only a nuisance but even a danger to human life. Doubtless the theory that the mosquito is responsible for the spread of yellow fever was evolved from the partly proven theory that it was the method of infection by which malaria was contracted. Scientific research and experiment have conclusively proven that a certain species of mosquito—the anopheles—is a means of infection for both of these diseases. Whether it is the sole method of infection or not has not been settled, but in the case of yellow fever the results in Havana would appear to indicate that such is the case. Neither has it been determined that these are the only diseases which this insect can and does spread among the people open to its attacks, but whether it is responsible for only these two or more the very fact that the insect is a nuisance should be sufficient to warrant the taking of measures to accomplish a very considerable reduction of its numbers or even its absolute extermination in any certain section.

Experience has shown that crude petroleum is a mosquito exterminator when used upon the ponds, pools and marshy spots where those insects breed, and as the use of this oil is becoming quite general for this purpose in other sections of the country, and especially in those sections where mosquitoes

have been proverbially bothersome, it would seem in order that the "experiment" be tried wherever they exist as a nuisance. Inasmuch as one species of mosquito has been determined to be a source or means of malarial infection, and as malaria is one of the troubles in this section of the State, there would seem to be warrant for the supposition that the anopheles is to be found here, in which case operations to accomplish its extermination are properly the province of the boards of health of the various towns and cities.

So far as we know no one of scientific experience and knowledge has yet made a census of the various kinds of mosquitoes found in this vicinity. As we have assumed above, there would seem little doubt, from the presence of malaria, that there are at least some of the anopheles, even though the greater majority of the insects may belong to that other species—the culex—which is thus far considered harmless except that its bite is irritating. Take the city of Springfield, for instance, one can scarcely find a section of the city in which the mosquito is not a nuisance—a source of discomfort and irritation to any one sitting outside after dark. What is true of Springfield is true, to greater or less extent, of every town and city in the valley, and it would seem that the possibility of adding to the comfort of the whole population in the Summer months, to say nothing of possible modifications of health conditions would be sufficient warrant for such slight expense as would be necessary to treat mosquito-breeding places with oil.

Where do these mosquitoes come from? If any one will take a ride or walk around the city and through the outskirts that question will not be asked a second time. Probably a hundred spots could easily be found in an hour spent a-wheel and a-foot, not one of which is very large—not one of which would require much of any expense to nullify—but all of which are breeding places for this little and pestiferous insect.

It is, perhaps, a little late in the season to accomplish any great good by undertaking the work now, and yet there are about two months during which time mosquitoes will be more or less troublesome. We would suggest that the board of health give this matter its immediate attention, and undertake, at least, some experimental work along this line, if it is not deemed expedient to make an effort to treat all the

mosquito-breeding places to be found within the immediate city limits. Whether any results are appreciably apparent this season or not, it would appear that a treatment of the various pools and puddles at this time would be extremely beneficial next season as the oil not only destroys the "wigglers," but is fatal to the larvae, and thus treatment now would doubtless have a very appreciable effect upon the number of the pest which would otherwise develop early next year, when more complete treatment of every spot within the immediate city limits should be undertaken early in the season.

While it is perhaps not necessary that expensive apparatus be built with which to do this work, it is interesting to note the method which has been adopted by Dr. Doty, health officer of the port of New York, in treating the mosquito-breeding places on Staten Island during this past week:

A wagon has been built which carries a tank containing 10 barrels, or 500 gallons of oil. Above this is a cylinder containing compressed air at a pressure of 2,000 pounds to the square inch, which is used to force the oil through the hose attached to the tank, and into the sprayer.

The sprayer is designed to sink about a foot and a half below the surface of the water. It is built like a wooden raft, and beneath there is a gridiron of iron piping in which small holes have been drilled. The oil is forced by a pressure of about 30 pounds into the sprayer under the water, to the top of which it rises in a thick, black, greasy mass.

Dr. Doty's investigations have shown him that the larvae are deposited about six inches below the surface. When the "wigglers" come out of the eggs they rise to the surface from time to time to breathe. The object of forcing the oil under the surface is to destroy the eggs.

Men were set to work cutting down the grass around the ponds. Then the raft was launched and dragged across the ponds by the laborers, the oil the while being forced through the pipes. In half an hour the ponds looked like pools of petroleum in the oil regions.

It was easy to locate Dr. Doty yesterday. When the wind blew in the direction of the visitor he could smell, though 10 blocks away, the scene of operation. Oil was also sprinkled from cans on the grass in the vicinity of the ponds.

"The test has been eminently successful," Dr. Doty said at

the conclusion of the work. "The apparatus worked finely and everything we figured on doing was done. I have no doubt that we have destroyed millions of mosquitoes, for my experiments show that a drop of oil is almost instantly fatal to the larvae and the 'wigglers.' When the ponds have been flooded with oil we will stop and note the results. The people in the neighborhood have promised to report to me.

"I am convinced that the grown pests will be driven away, too. The smell will accomplish this in part, and when they find that their breeding places have been destroyed they will depart for other fields."—Exchange.

———:o:———

WHAT IS THE MONROE DOCTRINE?

At the dedication and opening of the Pan-American Exposition at Buffalo on the 20th June, all the American republics were represented, and congratulatory messages were received from the Presidents of South American countries. More than 100,000 people entered at the gates that day. The guest of honor was Vice-President Roosevelt, who welcomed the exhibiting republics in behalf of the United States and delivered an address, pointing out at the beginning "the falsity of the belief that any one of us is to be permanently benefited by the hurt of another," and asserting that it is for the interest of every Commonwealth in the Western Hemisphere to see every other Commonwealth grow in riches, happiness, and manliness. The United States has, and ought to have, and must ever have, only the desire to see her sister republics in the Western Hemisphere continue to flourish, and the determination that no Old World power shall acquire new territory here on this Western Continent. We of the two Americas must be left to work out our own salvation along our own lines; and if we are wise we will make it understood as a cardinal feature of our joint foreign policy that on the one hand we will not submit to territorial aggrandizement on this continent by any Old World power; and that, on the other hand, among ourselves each nation must scrupulously regard the right and interests of the others, so that instead of any one of us committing the criminal folly of trying to rise at the expense of our neighbors, we shall all strive upward in honest and manly brotherhood, shoulder to shoulder."

Senator Lodge said: "We seek no extension to the southward, but we intend to control the isthmian canal and are abundantly able alone to guarantee its neutrality. That doctrine is that no possession now held by Europe is to be disturbed, but that Europe is to acquire no new possessions and to extend no old ones. Under no pretense can we of the American hemisphere suffer Europe to enter in and establish colonies or seek to partition Central or Southern America. We cannot, we will not permit any great military power to enter this hemisphere, settle down by our firesides, force us to create great standing armies and from some point of vantage offer an eternal menace to our peace. We ask you to be true to the doctrine which we announced seventy-five years ago. If you will put your faith in it and be true to it we will defend it.

"No American soil shall be given up to any power of Europe. We wish nothing but friendship with Europe; we do not seek to meddle in any way with European affairs, and we do not wish to have Europe meddle with us. No power which now has no footfold in this hemisphere can be permitted to come in here and by purchase, lease or other arrangement get control of even the smallest island for the purpose of establishing a naval station or a place of arms. When Spain sued for peace we could have demanded from her an island which would have given us a naval station in European waters, but we made no such request. In return we say no European power shall come in here to establish a naval station in the Caribbean Sea. A place of arms at that point, owned or controlled by one of the powers of Europe not now owning any territory in America, would be a menace to the canal and to every South American State. Under no conditions, under no stress of circumstances can the smallest island or the most barren promontory on either continent ever be ceded or sold to one of the great powers of Europe. This danger is real. It cannot be warded off by brave words, by Fourth of July orations, or by confident boasting of our strength and resources. It can only be avoided by a thorough agreement among all American States upon the Monroe doctrine; by the unceasing watchfulness, complete preparation and the most absolute readiness on the part of the United States."

SOILS.

(Written for the Planters' Monthly by our Special Correspondent.)

It is generally believed by geologists that the surface of the earth has at one time been solid rock and that soils have been formed by the action of various agents upon the rock, which have gradually disintegrated the same and resolved it into soil. Most soils, as we generally know them now, are not merely decomposed rock, but contain more or less organic matter and have therefore undergone a material change. Soils have not necessarily been produced where they are found; that is, a soil may have been transported from one locality to another. Such soils are called transported soils, whereas those soils which are found on the place where they have been formed, are known as sedentary soils. The transported soils must be divided into drift soils, produced by the action of glaciers, and alluvial soils, deposited by floods and inundations. In some places soil particles are carried away by the wind and deposited in other localities, such soils are called wind-drifted soils.

The manner in which soils are produced renders it impossible that any considerable area of it should be of uniform composition, moreover soils greatly differ in their chemical composition as well as their physical properties. The nature of a soil depends of course upon the kind of rock from which it has been produced, but the agents which have brought about the decomposition of the same are also of no little importance and influence. The disintegration of the rock has never been a sudden one, but has been going on gradually and incessantly. The quality and mechanical condition largely depend upon the circumstances and conditions under which the various agents have acted upon the rock, for these are not always alike in the different locations and at times even vary considerably on adjoining localities.

The most powerful agent, which is of the greatest moment in the formation of soil, is that process commonly known as weathering. It is a very complex process, being a combination of various distinct chemical and physical processes, a joint action of light, heat and cold, water, air and various

gases. Other important agents are the action of rivers and glaciers, various chemical actions, micro-organisms, as also the action of the roots of many plants.

PHYSICAL PROPERTIES OF SOILS.—Soils are physically composed of small particles of different sizes and kinds, which are in various stages of decomposition. They greatly differ both physically and chemically, due to the various kinds of rocks from which they have been produced and the circumstances connected with their formation. It is very difficult to consider the physical properties of soils apart from their chemical properties, as both are often convergent and dependent on one another, but in order to give a clear view of the matter it will be attempted as far as it is practicable.

THE SIZES OF THE SOIL PARTICLES range from those hardly visible under a microscope to coarse rock fragments. According to the predominance of coarse or fine material all soils are divided into sandy, clay and loam soils. Sandy soils are such which contain 85 per cent and over of coarse material or pure silica, whereas clay soils contain that much of pulverized earth. Loam is a mixture of sand and clay; if sand predominates it is called a sand loam and if clay predominates it is a clay loam. The term "fine earth" is generally applied to that part of a soil which passes through a seive of 0.5 mm. holes (0.02 inch) in diameter. However this name is purely an arbitrary one, but is the one most commonly used, as this material is generally used by chemists for the chemical analysis. The fine earth again is composed of several grades of soil particles but this is purely a scientific classification for which different scientists have different names. The course material and rock fragments constitute the skeleton of a soil.

The form and arrangement of the soil particles vary considerably in soils. These, together with the size of the particles, are responsible for a good many good and bad qualities of soils which will be described hereafter.

Contraction takes place when soils become dry, cracks will appear on the surface, due to the loss of water. The soil will shrink and will be divided into large clods. This contraction is most marked in clay soils and becomes less apparent the more coarse particles it contains.

COHESION AND STRUCTURE.—If the particles of a soil tend to adhere to each other the soil is called cohesive. Loose soils

are such which easily fall to pieces. The more powdered earth and clay are present the more cohesive a soil becomes, whereas sand and coarse material render a soil loose. Lime and humus lessen the cohesion. The structure of a raw uncultivated soil is close and crumbling. Cultivation improves the structure because it increases the capillarity, especially in clay and loam soils.

The adhesion of soils to agricultural tools and implements, is a peculiarity of especially the clay soils. Moisture increases the same. This adhesion considerable impedes tillage, accordingly soils are often divided into heavy and light ones.

Weight. Soils differ considerably in weight due to the extreme difference of their composition and mechanical condition. Clay soils weigh less per cubic foot than sandy soils. The more organic matter there is present, the less the weight, but when saturated with water, a cubic foot of peaty soil is heavier than a cubic foot of sandy soil. The weight of a cubic foot of the different soils is approximately as follows:

Sandy soil	90-100 pounds.
Loam soil	75- 90 pounds.
Clay soil	70- 75 pounds.
Peaty soil	30- 60 pounds.

(To be Continued.)

———:o:———

TRIUMPH OF AMERICAN ENGINEERING.

An interesting reprint of articles appeared in the London Times recently, written by an engineer who came to America in 1899 to investigate industrial conditions on behalf of that journal, states he found that iron ore travels a long way to be smelted; yet in the Pittsburg district the output from each blast furnace far exceeds that at home. This he accounts for by the greater richness of the ore and by the American practice of driving the furnaces fiercely and continuously. He found ore mechanically dumped into furnaces, a charge of 70 tons of molten steel mechanically "poured out as one would pour a cup of tea," and even the furnace doors mechanically opened and closed. Punching machines make ten holes at once in heavy plates, and space them as desired, and bicycle hubs are "produced by shutting a machine and a bar of round steel in a room by themselves." He found everywhere

automatic machinery which needs only to be started, stopped, and, at intervals, fed; interchangeability of parts, costly gauges used in the making of simple articles, ingenious devices of special sorts, arrangements for production on a vast scale, and an unstinted outlay for any plant that ultimately reduces the cost of output. The purchase of American locomotives by the English Midland, mainly because more rapid work can be had here, caused him to visit the Baldwin works, where he found that a "hurry order" for nine engines was filled in two weeks, in a busy time which found no special material in stock. The Atbara (Africa) bridge, made and delivered in a time which foreign concerns declared impossible, caused a visit to the Pencoyd works, where he found the affair not counted very extraordinary; he also found the works so laid out that raw iron enters at one end and emerges at the other as finished bridges.

The American, he found, has neither regard nor toleration for anything old if something better can be found; results on the largest and swiftest scale are his object, and he is entirely ready to adapt the article to the place and the customer. At a bridge works in Berlin, Conn., to which the investigator made a visit to find out how it is economically possible that an iron foundry should go from that place to Berlin in Prussia, he found the explanation to be adaptation and specializing. Large works all keep special classes of designers in several lines; if an equipment for some particular purpose is wanted, they have the men to devise it. The energy of Americans in causing business to make business impressed him. For instance, if an architect says he cannot substitute steel for wood the steelmaker neither berates him nor sits down to bewail, but sends an expert to show him how it can be done, and that ends it.—Ex.

———:o:———

ANNUAL MEETING.

The Annual Meeting of the Hawaiian Sugar Planters' Association will be held at its rooms in Honolulu on November 18th and 19th. W. O. SMITH, Sec'y.

———:o:———

Of the area of the Philippine Islands, one-ninth, or about 8,000,000 acres, is devoted to agriculture. Taking into account the natural fertility of the soil and the vast portion of these rich lands not yet under cultivation, it can safely be assumed that with better methods of exploitation the total agricultural production of the islands could be increased to ten times its present amount.

The Office of Experiment Stations of the United States Department of Agriculture will soon issue Bulletin No. 87, entitled "Irrigation in New Jersey." It was prepared by Prof. E. B. Voorhees, of the New Jersey Experiment Station, and describes his experiments in irrigation for the season of 1899. It is generally thought that the necessity for irrigation in the United States exists only in the region west of the Mississippi river, but repeated crop failures in the East and successful farming in the West have called attention to the importance of controlling the moisture of soils rather than accepting the conditions as they exist. Professor Voorhees estimates the loss to the hay crop of New Jersey from the drouth in May and early June, 1899, at $1,500,000, while small fruits and vegetables were even more seriously affected than the grasses.

———:o:———

APHIDES OR PLANT LICE.

Mr. J. G. Robertson of Pomona sends me samples of plant lice, which he wishes described and their habits given. The insects are on some umbrageous plants, possibly mulberry. I wish any one sending me insect specimens would always accompany them with the statement of the kind of plant which they attack. These plant lice are covered with long cotton-like hairs which make them to resemble the woolly aphis, which is so serious a pest to the apples and pears in many parts of the State and country. This is not, however, the same insect, nor does it belong to the same genus. The woolly aphis belongs to the genus Schizoneura and is known to science as Schizoneura lanigera. The insects sent are larger and, like the others, contain a large amount of the cottony secretion. This one belongs to the genus Pemphigus. Many of the species of both genera form galls. Our orchardists who grow apples are familiar with the root galls which are caused by the root form of the woolly aphis. Many of the species of Pemphigus secerte honey dew. I think this is true of the ones sent by Mr. Robertson, for I notice the leaves show the black smut or fungus which is always attracted by any nectar upon the foliage.

These plant lice are very peculiar in their method of reproduction. In the late fall appear the females and the only

males of the year. These mate, after which the female lays a few eggs. In the spring only females hatch from these eggs. As there are no males, of course these do not mate, but give birth to many other similar females. We call this agamic reproduction. The word agamic means "without marriage." We also use the word parthenogenesis to designate this kind of reproduction; which word means "genesis without males." Our drone bees, and the males of wasps, etc., illustrate this same law, as the eggs from which they hatch are not impregnated. These agamic females do not lay eggs but produce their young alive and so we call them ovoviviparous, which name refers to any animals where the eggs hatch within the parent, and yet all the nourishment used by the embryo comes from the egg. Animals like mammals, where most of the nourishment of the yet unborn comes from the mother, are known as viviparous. As we might expect from this method of reproduction, plant lice are enormously prolific. It has been said that a single pair in the fall would, in case no lice should be destroyed, become the parents of over three billions of lice the succeeding year.

The lice are very destructive to the plants, and I suppose this accounts for the fact that we have dimorhic forms the one, and more numerous, has no wings, while others have four good wings and so are capable of easy flight. In case the plants dry up and die because of the attack of the lice these winged forms can fly away to new pastures. The wings of this second form are very valuable in classification as the veins differ in different families. The veins of the wings are the nerves which give support to the thin membrane.

The long, cotton-like hairs which hang pendant from the bodies of these and other related Aphids are doubtless to serve for protection. We have sometimes been disgusted, as we bit into a doughnut on the morning of April 1st, which was full of cotton. The bird, doubtless, has similar feelings if it has ever attempted to snap up one of these woolly Aphids.

These Aphids, like all of the order of bugs, to which they belong, have sucking mouth parts, and thus do not eat the leaves but only suck the juices. Thus we can never kill them by the application of Paris green or other poison. To destroy them we must use some substance that kills them by contact. Kerosene emulsion or the distillate emulsion is the safest and

best remedy. A one-twelfth emulsion—one kerosene to twelve water—will almost always destroy the insect without injury to the foliage of the plants.

It is fortunate that in California we have a parasite, Braconid fly, which preys very extensively upon this plant lice. In the early spring, the plant lice often becomes very abundant on the ivy, walnut, orange, etc., and very soon entirely disappear. The close observer will note that the Braconid is the cause of this rapid taking off. The maggot of the Syrphus fly and the larva of the green lace wing, as also the larva and magot of lady bird beetles also destroy hosts of them. Destructive, then, as are these plant lice, they are not usually lastingly harmful in our section because of these various enemies.

———:o:———

TO DEVELOP THE CUBAN SUGAR INDUSTRY.

A New York correspondent of a Press Agency recently stated: The stockholders of the American Sugar Refining Company will receive in a day or two a communication from the Board of Directors in which it is proposed that the stockholders authorize the issue of $15,000,000 of new stock of the company. The communication will be sent to each of the 11,000 stockholders as soon as it comes from the printers.

The present capital stock of the American Sugar Refining Company is $75,000,000, half common and half preferred. When President Havemeyer was asked about the circular he said:

"Nothing should have been known about it until after the stockholders had received it, but since you have it, I don't know that it will do any harm to let the facts be known. I saw some kind of a perverted rumor about the proposition on the tape this morning sent out from Philadelphia. That stated that the money obtained by the sale of the new stock would be used to acquire properties of some of our competitors There is not a word of truth in such a statement. The American Sugar Refining Company does not purpose to buy up a single independent plant. We have no use for any more properties. And this includes the Arbuckles. We have made no settlement with them and have no intention of making one. If you were to say that the Sugar Trust had in mind some

operations in fields outside the United States, but not far from our shores, you might come pretty near to hitting the nail on the head.

Do you mean Cuba, Porto Rico and Hawaii? asked our correspondent.

"Hawaii is too far away," said Mr. Havemeyer, "they grow pretty good sugar in Cuba and Porto Rico. The sugar industry in Cuba will boom when they get the tariff fixed right. What they want in Cuba and what the beet sugar men and the cane sugar growers in the country would not object to is the admission to American ports of raw sugar from Cuba and Porto Rico free of duty. What the growers here want is a tariff on refined sugar. Give them a tariff on the refined product of half a cent. That will take care of them and we can get free raw sugar from Cuba and Porto Rico. When the tariff is adjusted along these lines the sugar industry in Cuba and Porto Rico will be worth watching. And Congress will give us that kind of a tariff.

———:o:———

THE BEET SUGAR PROBLEM.

There seems to be a wide difference of opinion entertained by those who should have a professional knowledge of the subject concerning the possibility of profitably establishing in this country the beet sugar industry. There are those interested, it is true, in the production of cane sugar who insist that the production of beet sugar in the United States must always be an artificial industry, and that, no matter how long it is maintained by bounties, subsidies and protection, it can never grow strong enough to stand unaided upon its own feet. It is insisted that all over the world the beet sugar industry is maintained under artificial conditions, so far as concerns government aid, and that it is this, the financial encouragement given to the business, rather than its intrinsic profitability, that has led it to so increase that at the present time quite two-thirds of the sugar used is sugar extracted from beets.

The cane sugar, it is pointed out, is not produced under conditions which furnish domestic protection and export bounties, but has, on the contrary, to develop itself, and in finding its market to come into competition with the bounty-fed beet sugar. Those adversely criticising this beet sugar industry

state that it is one which can only be made reasonably profitable in a country where there is an abundance of cheap labor, for a great deal of the work, the transplanting of the beets and the pulling off of superfluous leaves, are processes which cannot be performed by machinery, but must be exclusively hand work. Where, as in France, Germany, Austria and Russia, the women and children of the family do a large part of the hard work of the farm, the wages of labor are low, and the raising of beets for sugar can be carried on under conditions which hold out the possibilities of reasonable profit, although, as we have pointed out above, even in these countries government aid is either directly or indirectly looked to as a means of keeping the industry on its feet. But in the United States, where hand labor on the farms can only be obtained by the payment of high wages, where success in agriculture has been made possible by the substitution of machinery for manual service, such an industry can by no possibility be profitably carried on, even though the government should keep in perpetuity its present high duty upon imported sugar, a duty which, in the absence of a special need of revenue, would not be justifiable, considering how necessary the use of sugar is for the well being of our people.

Those who question the advantage of endeavoring to promote this industry point out the danger which its extensive development involves. Already the representatives of beet sugar have played an important part in attempting to control the policy of this country in relation to both domestic and foreign matters. They were instrumental by their activity in Washington in preventing for some years the annexation of Hawaii; they were more potent than those representing any other cause in changing the congressional bill providing for the free entrance into this country of the products of Porto Rico; they have stood in the way of one or two of our commercial treaties which seemed to promise material advantages to the manufacturers of the United States. In the settlement of the vexed problem of our future trade relations with Cuba and the Philippine islands one may be sure that the beet sugar interest will be found protesting against any change in our customs regulations which will permit cane sugar from these two former colonies of Spain to come into the United States at less than the present rates of duty. If the industry in-

creases in size, it will be found to be one of the most powerful factors in resisting any change in the way of reduction in the sugar schedules of the tariff, and this without regard to the quantity of sugar produced in the United States or the amount consumed by our people.

On the other hand, the promoters of the beet sugar industry state that there is no reason why, after the general introduction of this form of agriculture, beet sugar should not be made in the United States at as low a price as it is now made in any part of the world. The sugar beet, it is affirmed, is an admirable article to be used in a rotation of crops. In land used for grain growing, a field devoted to beet culture has a rest given to it which is just as effective and satisfactory as if it had been allowed to run fallow. In this way the farmer does not use land for beet growing to the exclusion of other crops, but simply raises beets upon land where but for this crop he would raise nothing. The expense of growing and tending has been, it is said, overestimated, and the farmers in the West who have turned their attention to this class of agriculture have found no reason in the pecuniary returns to regret the experiment.

Of course, sugar beets cannot be raised everywhere, and the climatic conditions required for their healthful development are not found in all parts of the country; but there are certain sections, it is said, which are peculiarly well adapted to this class of farming, and these, if utilized, furnish far more than space enough to grow all the beets required to supply all the sugar that the men, women and children of this country need, or will need for two or three generations to come.

Here, as we said at the outset, are two contradictory statements bearing upon what should be facts. While we are inclined to believe that the former of the two is more to be depended upon than the latter, we frankly admit that our information in one case, as in the other, rests upon statements the accuracy of which we cannot vouch for. Even the reports of the United States department of agriculture can be quoted in support of either side of the contention. The facts in the case ought to be clearly demonstrated; but, while so much interest exists on both sides to befog the issue, it is doubtful whether reliable data can be obtained.—Corr. Boston Herald.

THE POSSIBILITY OF ADMITTING CHINESE LABOR.

In the course of a year, the act of Congress which excludes the Chinese from immigration into this country will become void and although it has been accepted as a matter of course that Congress will re-enact it, there is a very decided certainty that active efforts will be put forward to prevent the prolongation of the law.

There is a strong and growing demand for the admission of Chinese labor into the country and its colonies, and it is based on two considerations. One is a requirement for cheaper labor, caused by the strenuousness of competition in the various manufacturing industries, wherein each nation is contending with all the others. The other is the belief that Chinese labor can be used to down the trade unions.

The expiration of the Chinese Exclusion Act will occur next May, and it is stated that in the New England, Southern and Middle Western States, where the Chinese are not known, and where there is a clamor for cheap labor, and where the pauper labor of Europe has proved undesirable, the feeling in favor of a repeal of the Exclusion Act is very strong. In the Hawaiian Islands there is the same demand for cheap labor. All the planters there and all the large owners of sugar stocks in the States and in the Colonies are almost sure to take a stand in favor of Chinese immigration to the islands. Not only this, but there is a feeling among certain employers of cheap labor that the conditions of the Exclusion Act should be modified.

In this connection, United States Senator Perkins, of California, has declared to the San Francisco Examiner that the public would be surprised to learn what prominent men have spoken to him on the subject of the Chinese Exclusion Act, and against its re-enactment.

Of course, while labor in California will resist all it possibly can the admission of Chinese labor to fill up all the fields of industry, not only in the Colonies, such as the Philippines, Hawaii and Porto Rico, but also in the United States. The Chinese are not desired for employment as skilled labor, for they have not the training necessary to make them useful in the higher branches of manufacturing, but in all the lower branches of work, where no special training and experience are necessary, the Chinese can be used, and it is safe to say

that neither whites nor negroes can successfully compete with these Asiatics.

It is not only a matter of great moment to white labor, but is more than ever of vital interest to the negroes. If this country is to be flooded with Asiatic pauper labor, it is certain that it will sound the doom of the negroes, the great majority of whom are unskilled laborers, and would suffer most from the competition of the yellow hordes.—Picayune.

———:o:———

AGRICULTURAL TRAINING.

Among the duties which will fall to its lot, the newly instituted Board of Agriculture will have to provide suitable training to teachers in the science of agriculture. A previous attempt in this direction proved, to a considerable extent, a failure owing to the abstention of many of the teachers from the lectures, not because of dissatisfaction with the lecturers or with the instruction afforded, but as a protest against the innovations of the Education Code. Without commenting here on the attitude taken up by the teachers on that occasion, we may assume that now that there is to be a revision of the Code, there should no longer be any obstacle to agricultural lectures being resumed and to their being well attended by teachers from different parts of the colony. In Jamaica teachers have taken, and are taking, full advantage of the opportunities in this direction given by the Board of Agriculture in that island. Last year the course of lectures was attended by thirty-five teachers, and for the present year some sixty have entered for another course. According to Dr. Morris, the first step that should be taken in these courses is "to train the teachers so as to qualify them to give the right kind of instruction, in the lower classes by means of object lessons, and in the upper, in close relation with experiments with plants grown in pots, boxes or school plots. The object aimed at, and to be clearly impressed on the minds of the teachers, is not to load the memory with facts, but to train the powers of observation and give the children an intelligent interest in the every-day facts of rural life." In opening the present series of lectures in Jamaica the Hon. S. Olivier emphasized this, and said one of the objects of the Board of Agriculture was to spread the principles of agriculture among children. The

best and most certain way to do this is to have qualified teachers to impart the knowledge. In order to bring this about the Jamaica Board has inaugurated a series of lectures covering a wide field in agriculture, both in practice and theory. The first thing the lecturers do is to show the teachers how to handle the tools and to work the soil. Then lectures are delivered on natural life which go very thoroughly into the question of the condition of soils, how it is that plants grow thereon? how can they be made to grow better on other soils? why do they grow better? and what kind of food is necessary for them? These questions are explained and simplified by the use of practical experiments. The course also includes lectures on "irrigation," "small stock," "how to prepare produce for the markets," and "how to make capital out of small cultivation without borrowing capital." It will be seen that all the subjects are of an extremely practical nature and just the kind that should make agricultural instruction profitable, as well as interesting. It is necessary, with the limited time that teachers have at their command, that the science they have to teach should be simple and easily understood by the pupils. Mr. Watts in his useful manual, "Nature Knowledge" says that some skill and judgment are required to adjust matters so that the teaching shall be so distributed as to proceed in an even manner, as delay and inconvenience may arise if the teacher be not thoroughly equipped to teach the daily or weekly lesson. The object of imparting agricultural knowledge is not to train children so that as soon as they leave school they may be expert agriculturists. The object was very well defined by the Hon. Mr. Olivier when he said that the idea was to "train children so that they would grow up with a general knowledge of nature, so that they would not make the great waste of labor which was now the case. The object of training the teachers was to have them train the boys and girls in their schools so that they might become good agriculturists and would then take an interest in their work, so that, in fact, things which their fathers did not know would be second nature to them as also a delight. There can be no doubt a great deal of ignorance is prevalent and is displayed among the peasants on agricultural matters, and until something is done to enlighten them in what will be to their advantage and to the benefit of the colony, little progress need be looked for

in that quarter. Agriculturists do not require to be "book-learned" on their calling—they generally have an antipathy to book-learning of any kind—but if facts concerning their farms and produce be instilled into them from their youth the gain will be great. No doubt the Board of Agriculture will arrange for the delivery to teachers of a popular course of lectures, with manual instruction, similar to that which we have described, and it will depend on the teachers themselves whether it prove the success it deserves.—Dem. Argosy.

———:o:———

The following is a summary of the official statistics concerning the foreign commerce of the United States and the receipts and expenditures of the Government for the calendar year 1900:

	Exports from United States.	Imports into United States.
Great Britain	$ 602,221,375	$ 151,566,743
Germany	197,603,400	103,456,554
Netherlands	83,721,501	17,273,111
France	82,553,335	72,781,212
Belgium	46,929,953	14,602,542
Italy	36,731,704	27,051,126
Denmark	15,499,371	796,736
Spain	15,200,917	5,538,662
Sweden and Norway	11,520,574	4,369,984
Russia	8,498,950	7,897,030
Austria-Hungary	7,657,019	10,548,698
Portugal	5,705,179	3,349,110
Turkey in Europe	297,283	3,598,806
Switzerland	297,283	17,447,937
Canada	102,900,250	40,311,443
Mexico	38,270,933	28,179,829
West Indies	47,173,822	51,892,462
Brazil	11,516,681	64,914,507
Argentina	11,095,538	8,098,343
Chile	4,596,525	7,474,061
Venezuela	3,016,762	6,529,858
Japan	26,492,111	26,315,235
Chinese Empire	11,081,146	22,940,397

TRADE BY GRAND DIVISIONS.

Europe	$1,116,399,524	$ 441,610,461
North America	198,791,572	130,231,076
South America	41,248,051	102,706,633
Asia	58,726,173	120,378,219
Oceania	39,805,176	23,067,642
Africa	22,979,170	11,025,306
Grand Total	$1,477,949,666	$ 829,019,337
Excess of exports	$ 648,930,329	

INCOME AND OUTGO.

Receipts.

Customs	$ 237,740,309.23
Internal revenue	300,063,533.02
Miscellaneous	36,593,028.08
Total	$ 574,396,984.33

Expenditures.

Civil and miscellaneous	$ 114,281,649.69
War	139,364,579.34
Navy	57,635,826.09
Indians	11,060,112.08
Pensions	140,906,573.46
Interest	33,785,943.33
Total	$ 497,034,683.99
Excess of receipts	$ 77,362,300.34

———:o:———

IN HARVEST TIME.

Oh, I saw her at the time of the planting of the cane—
The April sun had broken through a filmy mist of rain,
And a little wind and sweet
Swayed the grasses at her feet
As I turned to look and turned to smile and turned to look again;
And I said, "How good a thing
Is the promise of the spring?"
At the time of the planting of the cane.

Oh, I kissed her at the time of the growing of the cane—
Her laugh was like the melody that threads the lark's refrain;
Bud and blossom everywhere
Sent their perfume through the air
And the branches bent above her where the ripening fruit was lain;
And I said, "Lo, love hath grown
Like the seed thy hand hath sown!"
At the time of the growing of the cane.

Oh, I won her at the time of the cutting of the cane—
We guided o'er the empty fields the heavy-laden wain.
And my life was like to sing
With the joy of harvesting!
Oh, love's sowing, nor his growing, nor his mowing was in vain.
And I said, "Give thanks, my heart,
For the store that is thy part!"
At the time of the cutting of the cane.

ANON.

———:o:———

SUGAR AS FOOD.

The Cobden Club of England has taken decided exception to some of the changes in the customs schedules of the United Kingdom, and has put in circulation a leaflet in which it makes the argument that, as the duty upon sugar is a tax upon one of the prime necessaries of life, it is an entirely unjustifiable means of raising government revenue, provided other means can be found. The leaflet in question contains a reprint of an article in the British Medical Journal entitled "Sugar as a Food." This scientific authority points out that it has been clearly demonstrated that under certain circumstances sugar can be converted into fat, in which form it can be stored in the human body and so be capable of producing heat and force in the future. It is thus an admirable food, not so much for building up tissues as for producing heat and energy, and has for human use the additional advantage that it can be stored in a very small space, and can be kept for practically an unlimited time.

By careful experiments, made by Mosso, it was found that

much less muscular deterioration occurs under a sugar diet, and that when muscles are fatigued and incapable of further work a sugar diet quickly brings them into serviceable condition. Between 1895 and 1898 a number of experiments were made in Germany by the army surgeons as to the effect of sugar upon men both of weak and strong muscular physique. In the early days of these investigations it was found that in a half or three-quarters of an hour an ounce of sugar would restore the power of work to muscles so tired that they had previously given hardly any appreciable results. In the army manoeuvres of 1898, which took place at Metz, twenty men were selected from each company, and an extra ration of a little less than four ounces of sugar was issued to ten out of twenty thus chosen, with results in favor of the sugar eaters. While they increased in weight, their comrades either did not gain or lost; they enjoyed better health, and were able to support the hard work with much less distress. None of the sugar eaters were overcome with exhaustion, and their pulse rate and breathing were less affected by exertion. In the active physical work they were engaged in they relished the sugar and did not get surfeited by it.

The use of a lump or two of sugar is described as acting like a charm, not only in case of fatigue, but also in quenching thirst. The result of these experiments was the decision of the army authorities that the sugar ration of the German soldiers should be raised to two ounces a day. This experience is verified by the practice recently adopted in Holland of having young men, when in training for athletic contests, eat a considerable quantity of sugar. It has been found that those so fed bear the training better than their associates, and are much less liable to become stale or overtrained. Still another authority, Dr. Nansen, has said that he considers the brandy drinking, so often indulged in in northern regions, as injurious, and that in the voyage of the Fram he had the place of spirits taken by fruit and various kinds of sweets, which appeared to be far more conducive to the health of the ship's company.

———:o:———

When milk cows are required to drink water that one would not drink himself and he uses the milk he gets the impure water in another form.

A PAN-BRITANNIC CABLE.

Our experience in being cut off twice within two months from cable communication with the outside world should bring home to the public at large, and the business community in particular, the great hardships which result from the present unsatisfactory, uncertain, and expensive system. Since Sir Cavendish Boyle, while acting Governor, approached the Governors in the West India Islands on the matter, nothing has been heard about an improved cable connection, but the present long interruption to the service cannot fail to direct attention in this colony to the scheme to connect the different portions of the British Empire with an all-British cable, which received the approval of the Imperial Government on the 30th July, when $200,000 was voted as the contribution of the Mother Country toward the laying of a telegraphic of the cable in the Pacific,—the first instalment of the cable which is to girdle the earth's circumference. Nearly all the leading Chambers of Commerce in the various colonies have passed resolutions in favor of such a Pan-Britannic cable, and we shall in the course of time, experience the estimable boon in those regions. The scheme which has been put forward by Sir Sandford Fleming, K. C. M. G., Postmaster General of Canada, is divided into three parts:

(1) Cables in the Pacific Ocean;
(2) Cables in the Indian Ocean;
(3) Cables in the Atlantic Ocean.

The Pacific cable will start from Vancouver and terminate at New Zealand and the eastern coast of Australia. It will have three mid-ocean stations—the first at Fanning's Island; the second at one of the Fiji group; the third at Norfolk Island, which will be the point at which the cable will bifurcate, one branch extending to New Zealand, and the other to Eastern Australia. This cable has already been begun, and there seems every prospect that in a short time the Indian Ocean and the Atlantic Ocean cables will follow. In the Indian Ocean it is proposed to start from King George's Sound or some other convenient point in Western Australia, and to lay a cable to Cocos or Keeling Island, thence to Mauritius and thence to Natal or Cape Town. From Cocos the branch will extend to Singapore, and connect with Hong

Kong via Labaun, by the existing cable, while India will be reached via Ceylon. At Mauritius there will be connections with the cables to the Seychelles, Aden and Bombay. In the Atlantic system, which will affect us, the third mid-ocean station will be Bermuda, the other two being St. Helena and Ascension. It is not altogether certain what the intentions with respect to connecting the different places in this circuit are but it is possible that a new cable may be laid. The total length of the cable is estimated at 23,000 knots, and the cost between five and six million sterling. Dealing with this matter Sir Sandford Fleming says:

The improvement of the mail service by the adoption of universal penny postage was a wise Imperial measure, but in view of geographical conditions the mail service alone is inadequate. The electric telegraph can meet the conditions, and it is the only agency which can do so, but it must not be restricted by the limitations imposed by companies, whose main object is private profit. This great agency of civilization has been given to man for nobler purposes. A little reflection will show that, brought under State control, it is destined to revolutionize the world's correspondence. By carrying the postal telegraph service to every post office, in every British possession, our people so widely sundered geographically will be drawn into one neighborhood. This marvellous result is rendered certain by two remarkable facts. First the fact that telegraph messages are instantaneously transmitted gives them an immense advantage over the past. For example, if a correspondent in Canada writes to a friend in New Zealand, he could not receive an answer by mail for eight weeks, while with the telegraph a reply would be due in a few hours. Secondly, distance does not appreciably add to the cost of sending messages by telegraph, for there is practically no greater outlay incurred in transmitting long than in transmitting short distance messages. In the case of postal matter the expenditure is constant for every hour and continuous for every mile, whereas in telegraphy there is an entire absence of such expenditure. With a telegraph properly established and equipped, messages may be transmitted 100 or 1,000 miles, at no greater cost than one mile. These striking facts afford the strongest grounds for the belief that, with the cable and telegraph service nationalized, an extremely

low uniform charge, a parallel to penny postage by Imperial telegraphy, will be found possible. Would anything else tend to develop in so high a degree, a common feeling of kinship among our people? Statesmen desirous of taking practical steps toward consolidating the Empire, now find the way open for their efforts by furthering this crowning development of the British Post Office.

We can only hope that the time may not be far distant when the aspirations of Sir Sandford will be realized, and an end put to the most unsatisfactory condition of affairs which at present exists.—Dem. Argosy.

———:o:———

THE SUGAR INDUSTRY IN EUROPE.

U. S. Consular Reports.

In the beginning of the year 1900, there was a general fear on the part of the sugar dealers in Austria-Hungary of an overproduction, but this proved unfounded on account of an unexpected failure of the crop in nearly all the colonies. The sugar trade is generally able to estimate very closely the amount of raw sugar produced in Europe, but the colonies are an uncertain quantity, and nearly every year furnish a surprise. The general calculations of the trade have been that the sugar crop in the colonies would increase from year to year; but in the place of this increase, there has been yearly a decrease. It is said that the United States imported in 1900 only 1,558,266 tons of sugar, against 2,219,847 tons in 1899, although the consumption of sugar in the United States rose from 2,078,068 tons in 1899 to 2,219,847 tons in 1900; and the whole stock at the end of last year amounted to only 69,000 tons as against 208,472 tons in the previous year. This shows that our production of sugar is increasing gradually, and indeed the syndicates who manipulate the market in Europe believe that the time is not very far off when the United States will produce all the sugar it needs, and they are seeking other markets and considering the possibility of a greater consumption of sugar by the different nations. Statistics for the year 1900 show that Russia consumed about 20,000 tons more than in 1899; Germany, 91,243 tons more; France, 29,250 tons more; and on account of the increase in

the consumption tax, consumed 27,692 tons less in 1900 than in 1899.

The statistics further show that Spain, Italy, and the Balkan States have not only produced all the sugar needed for their home markets, but that they have also begun to export to a small extent; that Egypt, which up to a few years ago used to import annually 50,000 tons from Austria, is now exporting large quantities to the United States and India, so that the best outlets for sugar are those in the Far East.

The export of sugar from Austria-Hungary to the East India and Japan in 1900 showed an increase over the previous years; but Japan passed a law, which went into effect on April 1 of this year, providing for a consumption tax, which will reduce the demand for sugar and eventually lead to the establishcent of sugar refineries there.

The only consolation, it appears, that Austrian dealers in sugar have is that there is no prospect of abolishing the export premiums paid by Germany, Austria, and France. Austria is opposed to the abolition of this tax, because France is its main competitor, especially in refined sugar in England.

It is surprising that the United States, with its millions of acres of virgin soil and with its improved machinery, has as yet such a comparatively small acreage planted in sugar beets and so few sugar factories.

———:o:———

NEW YORK SUGAR GOSSIP.

Mr. Havemeyer recently delivered himself of some very interesting ideas on the subject of sugar refining. In regard to the dividend he said:

"Anybody who will take the pains to read between the lines will see that I hope to continue dividends on a basis of 4 per cent. for the common. We wish the stockholders to know that they will be protected. We are not going to get into a trade war for the fun of fighting.

"We will see that the business is conducted in such a way that the stockholders will have nothing to fear. We are simply going to lay low for a little while and see what our competitors do.

"You may depend upon it that we shall not meet the cut of the Arbuckles unless there is a drop in raw sugars, and

then we shall lower our price of refined, not because anybody else does, but because that has always been our policy since there has been such sharp competition?"

"Do you expect to down the Arbuckles?" he was asked.

"We have no such intention. They are in the business like ourselves, and we have no monopoly of it. They have the same right in the sugar business as they have in the coffee business—and we claim the same right to do what we please."

"What are the prospects of the raw product going down?"

"I don't see any at present," was the reply. "The raw market is largely controlled by a few speculators in beet sugar in Germany, and we shall have to watch them. When the raw market is beginning to weaken they all turn in and try to sell, but when it is strong they hold on and try to get all there is out of it."

"But with the Arbuckles 5 cents a hundred pounds lower than you are, they must be getting all of the business," was suggested.

"You can draw your own conclusions about that," was the reply. "But I can tell you that nobody is doing much at present. We shall, however, go our own way, regardless of anybody else."

"How about the insinuations that you made secret cuts, and they are simply making an open price to meet you?"

"That is preposterous," said Mr. Havemeyer, with some feeling. "Everybody that knows anything about us knows that we always do openly what we have to do. We never discriminate between one man and another."

Mr. Havemeyer then digressed to a talk about the Porto Rican and Philippine situation, and declared that there was no reason in the world why sugars should not be admitted free of the duty from those countries.

"I am very much in favor of it," he said, "and I believe the time is not far off when they will be admitted free of duty. Why, both of those countries are part and parcel of the United States and no matter what action Congress takes, I am confident that the Supreme Court will hold that the products of those colonies are entitled to free entry here.

"If Porto Rican sugars are brought in free it will not be long before some similar policy is adopted with reference to Cuban products."

Mr. Arbuckle declined to talk about the sugar situation, but it was said by one of his representatives that there had been no change in the price situation and there would not be during the day. It will probably be several days before the stock is closed up. The reason of this is that jobbers are expecting Mr. Havemeyer to apply the knife and astonish trade, and they want to be ready to pick up some bargains.

At the office of Claus Doscher it was practically admitted that the New York Refining Co. is resting on its oars and devoting itself mostly to disposing of the product on hand.

Everybody is now waiting to see how the raw market will behave. The supply is cleaned up and there is a nominal price of 3½ cents a pound for centrifugals, but it is questionable whether any of the refiners will want to pay more than that, with prospect of suffering a loss on every pound of refined turned out.

———:o:———

IRELAND'S CHANCE.—SUGAR REFINING AND AN END TO POVERTY.

Satisfaction is expressed by Liverpool sugar refiners with the statement of the Chancellor of the Exchequer that the sugar tax is to be permanent; permanent as far as fiscal arrangement can be, which are subject to the "swing of the pendulum," and the "ins and outs" of party politicians. The tax is likely to last the life of the present Government, anyhow.

While the Chancellor rejoices at the tax, and the consumer does not complain, sugar refiners throughout the country are being encouraged to resume operations; refineries that had been closed owing to the competitions of foreign bounty-fed sugar are now reopening, and a company is being formed at Liverpool to develop the sugar refining industry on a large scale.

The debate in the House of Commons on the sugar tax the other night is adversely criticised by experts, and those members of the House who advocated the granting of preferential rates to British Colonial sugar growers, as against the foreigner, are roundly declared not to know what they are talking about.

Only one of the many members who debated the matter

really touched the spot, and that was Mr. David M'Iver, of Liverpool. Mr. M'Iver suggested that we should grow our own sugar, and not be dependent on either foreign countries or our colonies. But can we do so? The answer of sugar experts is that the United Kingdom could grow all the sugar it wants, and more, within its own borders. Climate and soil are admirably adapted for the growth of beet, a fact that has been established by experiments on so large a scale as to remove the project altogether from the region of theory. These experiments have taken place over a series of years, so as to average the results, and the average extraction of sugar from British grown beet is considerably in excess of that from foreign. Ireland is eminently suited for sugar-growing. Sugar growing would be the moral and material salvation of Ireland, for all the ills of Ireland spring from the poverty of the people, and poverty from the want of industries. The growth and manufacture of sugar in Ireland would revive her agriculture, its preparation for the market would necessitate the establishment of many refineres, and between them employment would be provided in abundance, and a progressive people would be contented and loyal.

So highly do sugar refiners think of the prospects that a well-known firm in Liverpool propose to put themselves in communication with Mr. John Redmond, and broach the subject to him.

The experiments carried out by Mr. Sigmund Stein, of Liverpool, in Ireland, show that 100 lbs. of beet roots will produce 16 lbs. of excellent sugar, 160 tons of roots will produce 16 tons of sugar; Ireland, he calculates, is capable of growing 30,000 tons of sugar per annum a quantity sufficient to put a large area of the island under cultivation; while to refine the sugar 100 factories would be required, each costing $80,000, each given employment to 400 men, women, and children, and each requiring at least 2,500 acres of land to be planted with beet. What is wanted is capital; but as we take 1,700,000 tons of sugar every year from the foreigner, and pay him 20 millions sterling for it, there is every encouragement for capitalists to put money into Irish agriculture, sure of a handsome profit on their outlay. At least five millions sterling would be annually turn-over of the Irish sugar industry; and there are subsidiary industries to which it would give

rise. The roots of the beet, for instance, after the sugar has been extracted, make splendid cattle food, and in that and other ways Irish agriculture would feel the benefit; a new Ireland would be created.

There is no reason why the United Kingdom, as stated, should not grow all its sugar. England and Wales are capable of producing 900,000 tons per annum, Scotland 400,000 and between them they could supply every home want, and keep the twenty millions that now goes to the foreigner every year, in John Bull's pocket.

———:o:———

HOW HAWAII HAS BENEFITED BY RECIPROCITY.—PORTO RICO'S OPPORTUNITY.

The action of the Porto Ricans in promptly accepting that feature of the Porto Rican act which authorizes free trade between the island and the United States is likely to give them great advantages over their sister islands of the West Indies. At least, this is a reasonable conclusion, from an examination of some figures just made public by the treasury bureau of statistics, regarding the prosperity which Hawaii enjoyed after the reciprocity treaty which admitted the sugar of those islands into the United States free of duty.

These figures show that the sugar production of the Hawaiian islands has increased over 2000 per cent. under the free admission of their sugar to the market of the United States, while the other cane sugar-producing islands and countries have during that time suffered great depression, and in many cases heavy losses.

It was in 1876 that the reciprocity treaty was made between the United States and the Hawaiian islands. Prior to that date the average production of sugar in the islands was but about 25,000,000 pounds per annum. In five years the production had trebled, in 15 years it was 10 times as much, and in 20 years 20 times as much as before the treaty. Within less than 10 years after the ratification of the treaty more than $20,000,000 of American capital had been invested in the islands, and the total value of the sugar production of the islands since the treaty is $250,000,000.

The advantages which Hawaii has had over other sugar producers by reason of her ability to sell her sugar free of

duty in the United States is illustrated by the following table, which shows the relative growth of sugar production in Hawaii, Porto Rico, Cuba, and the entire cane and beet sugar sections of the world, from 1870 to 1899. It will be seen that Porto Rico has decreased her production slightly in that time; that Cuba increased her production from 1870 to 1895 (her greatest sugar year) but 45 per cent.; that the cane sugar production of the world increased from 1870 to 1899 but 80 per cent., and the beet sugar production 570 per cent., while during the same time the Hawaiian production increased over 2,000 per cent.:

	—Quantity produced—		Percentage of Increase (+) or Decrease (—)
	1870	1899	
Porto Rico	85,558	58,928	—31.12
Cuba	725,505	*1,054,219	+45.31
World's cane sugar ..	1,585,000	2,862,000	+80.57
World's beet sugar ..	831,000	5,575,000	+570.88
Hawaii (1875)	11,196	243,470	+2074.60

The increase in commerce between the Hawaiian islands and the United States which followed the free movement of merchandise between those islands and our ports is also illustrated by the fact that the exports to the Hawaiian islands from the United States prior to 1876 amounted to less than $1,000,000 annually, but rapidly increased, until, in 1900, it was about $14,000,000, and a recent report from the collector of customs at Honolulu estimates the figures for the present year at $20,000,000. The commerce of the islands is, according to the American Cyclopedia, an accepted authority, larger per capita than that of any other country in the world, and nearly all of it with the United States and carried in American vessels.

The fact that this enormous increase in production and commerce and wealth of the Hawaiian islands has followed the freedom of trade with the United States, established by the reciprocity treaty of 1876, suggests that the Porto Ricans are likely to benefit by the same close trade relations.—Boston Herald.

---

*1895.

FREE RAW SUGAR.

Will Congress grant it? If public sentiment is followed, free raw sugar will be among the results of the next Congress. When such journals as the New York Evening Post and New York Journal of Commerce look with favor upon the proposition for free raw sugar, they may take courage and work for its attainment. The Evening Post denominates the matter "a persistent force of self-interest which coincides in some degree, also, with the public interest, and which will work untiringly and without ceasing for the introduction of raw sugar from Cuba free of duty." Not alone from Cuba, but unlimited free raw sugar, with a protective duty of one-half cent per pound on refined.

If Congress gives the country free raw sugar, it places a premium on the extension and multiplication of American industries, and can work no harm to the beet sugar industry of the United States.

In the Far West competition between the beet growers has brought about interesting results, and, so far as the legislature is concerned, should bring their vote in favor of free sugar.

The foremost fact is that the grower is getting four dollars per ton for the beets he grows, and, if the sugar companies were compelled to pay five dollars per ton, and thus add greatly to the gains of the farmer, it would still be possible for the beet sugar factories to produce granulated sugar at three cents per pound, and obtain a profit sufficient to pay 8 to 10 per cent dividend on the capital invested.

Free sugar cannot hurt the farmer nor his close ally the sugar-maker. Neither interest needs much, if any protection, and, with cheap land, modern machinery, and latest methods, they can defy competition with countries that grow sugar under favorable natural conditions. The American beet sugar industry can hold its own if Congress gives the people free sugar.

In 1890 Congress removed the duty on sugar, the only staple besides wheat universally used. And what was the result? The per capita consumption increased fifteen pounds; American preserves almost destroyed the trade in English jams; American canners found a rapidly extending market for preserved fruits; the confectionery industry took on new life;

every family saved enough yearly to pay for a suit of clothes for one of the children; and every industry into which sugar entered gained in capital and trade.

When the United States Treasury found its credit in danger Congress deemed it wise to restore the duty, and it is a significant fact that from that time the per capita consumption fell off below the average of the period of free sugar.

Today the Treasury has an enormous surplus; a revenue greater than its expenditures; a credit second to no other government in the world. Could there be a more propitious time for Congress to give the people free raw sugar?—"the greatest boon it could confer on the American people." We believe the next Congress will.

It will not check the farmers' prosperity. The growers of beets have demonstrated they do not need a duty on raw sugar, and, therefore, it is in order that the people should be blessed with free sugar. It has been granted to Hawaii and Porto Rico, and enjoyed by Louisiana and the beetgrowing States.

Even in those particular States where beet culture is established, the benefit, outside of the profit to the manufacturer of granulated at 3 cents a pound and the extremely large advantage to the farmer with beets at $4 a ton, is denied to the community, because the price incidental to the reimposition of the 2 cents a pound revenue advances the price from 3 cents to 5 cents, which goes into the Treasury of these beet corporations. The Sugar Trust's demands for one-fourth of a cent a pound is multiplied by eight by the inordinate greed of these beet companies.

We all look forward for Mr. Roosevelt, with the aid of his party, to further add to his renown by granting this inestimable gift to the people of the United States.—Am. Grocer.

———:o:———

SUGAR AND THE BLACK LABOR QUESTION.

Editor Queensland Sugar Journal. Sir:—If we are to take the result of the late Federal elections as the definite opinions of the people of Queensland on the Kanaka question, it is time that we should look about us for some solution of the fact that, under the present circumstances, the suppression of the only reliable source of labor for work in the cane-field, will

mean ruin to those engaged in that industry, as far as that source of income means. In looking round for another kind of labor to replace the Kanaka, and looking at other countries, we see that in Hawaii and the Southern States of America they have tried, with more or less success, to replace colored labor with the natives of Southern Europe, especially Italians and Portuguese, and from Madeira and Azores. Labor has been indented under long terms from these places. How far will the leaders of labor assist the planters in getting this labor? I don't think, with all respect to the natives of these countries, that this solution of the difficulty will be agreed to. Yet the fact is, remove the colored labor from Queensland alone, and they will require to be replaced by from 9,000 to 11,000 field laborers, and when all the colored labor of Australia—namely, those in the Western Australian and Queensland pearling fleets, those on the plantations of New South Wales, and those engaged in various work in the Northern Territory of South Australia; when all these are gone, thereby making a white Australia, from 40,000 men upwards will be required to replace them, or these industries will perish.

The solution offered by various politicians is by putting a £5 per ton duty on sugar, which they say will enable the planter to pay wages which will induce white men to take to the canefield work. What have our brewers, jam and confectionery manufacturers to say to this? It will increase the price of the raw material from 30 per cent to 40 per cent. Will they be able to export, say, jam, as they are doing at present, and compete with those who make it in a country where sugar is admitted free, and how will the working man like it, when his beer, jam, sugar, and other necessaries of life are to cost prices which will make them luxuries?

I would ask for a careful consideration of all who wish to face the matter fairly. Take for granted that it is honestly desired to make Queensland a country for white men only. The placing of a £5 duty on the sugar used in Australia will mean taking £750,000 out of the pockets of the consumer (unless the quantity used is reduced by the increased cost). Would it not be fairer to meet the planter, and say we are determined to do away with the source of your labor, but do not wish to do you too great an injury. We will compensate you, and the compensation would be a small sum compared

with the loss to the various trades which use sugar, and to the consumer of these goods, caused by the large increase in cost. The compensation could be settled just as it is to the publican whose license is taken away by local option in Victoria. This apparently large sum—namely, the compensation, could be met by giving Treasury bonds at 3½ per cent for thirty or forty years, thus offering, we think, a fair and equitable solution of the difficulty. Raw sugar could then be admitted free, and the refiners and manufacturers would not be hampered as they will be if the present cost of sugar be raised £5 per ton. And the planter will have at least a part of his capital, and will be able to engage in some industry where he will not offend by using colored labor, and what will, perhaps, be a greater inducement for some to accept this solution, it will remove a great difficulty from the path, which so far has prevented the abolition of colored labor in Queensland—namely, the fact that there is a vested interest in the way.

———:o:———

"Combinations of capital," says James H. Eckels, ex-Controller of the United States, "properly formed and honestly conducted, will rather commend themselves to the public than otherwise. I doubt the wisdom of rushing to the lawmakers for the enactment of anti-trust legislation. It seems to me the amount of capital employed and the number of points at which a business is conducted under the same management is no more the subject of legislation than is a very small business conducted at a single point. The best way to prevent improper combinations is for the public to leave them alone, and if there is no purchase of the stock there will be no combinations. The 'Be it enacted' of a legislative body is a poor remedy for the average business evil."

For the last four months there has been a steady rise in the price of rock phosphate. Rock that could have been purchased four months ago at $2.25 per ton is now selling at $4 per ton. For high grade, hard rock—rock that is called 80 per cent—as much as $11.50 has been paid in Charleston during the past week. That the increase is not the result of speculation is shown by the fact that the advance is general.

Tilling of soil is the most healthful, delightful and independent pursuit of man.

HONOLULU STOCK AND BOND EXCHANGE, NOV. 12, 1901.

STOCK	Capital Authorized	Shares Issued	Capital Paid up	Par Value	Last Sale
MERCANTILE					
C. Brewer & Co	$ 1,000,000	10,000	$ 1,000,000	$ 100	415
N. S. Sachs' Dry G'ds Co. L'd.	60,000	600	.....	100	100
L. B. Kerr & Co., Ltd	200,000	4,000	.....	50	
SUGAR					
Ewa Plantation Company	5,000,000	250,000	5,000,000	20	24¼
Hawaiian Agricultural Co	1,000,000	10,000	1,000,000	100	265
Hawaiian Com'l & Sugar Co.	10,000,000	100,000	2,312,750	100	80
Hawaiian Sugar Company	2,000,000	100,000	2,000,000	20	30
Honomu Sugar Company	750,000	7,500	750,000	100	130
Honokaa Sugar Company	2,000,000	100,000	2,000,000	20	33¼
Haiku Sugar Company	500,000	5,000	500,000	100	.....
Kahuku Plantation Company	500,000	25,000	500,000	20	23¼
Kihei Plant. Co. Ltd.,	2,500,000	50,000	2,500,000	50	9
Kipahulu Sugar Company	160,000	1,600	160,000	100	.....
Koloa Sugar Company	500,000	5,000	500,000	100	164
Kona Sugar Company	500,000	5,000	500,000	100	.....
McBryde Sug. Co. Ltd.	3,500,000	175,000	3,500,000	20	10
Nahiku Sug. Co. Ltd. Assess.	675,000	33,750	.....	20	.....
Nahiku Sug. Co. Ltd. Pd. up	75,000	3,750	75,000	20	.....
Oahu Sugar Co	3,600,000	36,000	3,600,000	100	100
Onomea Sugar Co	1,000,000	50,000	1,000,000	20	24
Ookala Sugar Plantation Co.	500,000	25,000	500,000	20	10
Olaa Sugar Co. Ltd., Assess.	2,500,000	125,000	865,000	20	.2
Olaa Sugar Co. Ltd., Paid up	2,500,000	125,000	2,500,000	20	11½
Olowalu Company	150,000	1,500	150,000	100	.....
Paauhau Sug. Plantation Co.	5,000,000	100,000	5,000,000	50	.....
Pacific Sugar Mill	500,000	5,000	500,000	100	.....
Paia Plantation Company	750,000	7,500	750,000	100	250
Pepeekeo Sugar Company	750,000	7,500	750,000	100	.....
Pioneer Mill Company	2,250,000	22,500	2,250,000	100	100
Pioneer Mill Company Ass.	500,000	5,000	125,000	100	25
Waialua Agricultural Co	4,500,000	45,000	4,500,000	100	50
Wailuku Sugar Company	700,000	7,000	700,000	100	370
Waimanalo Sugar Company	250,000	250,000	250,000	100	152½
Waimea Mill Company	125,000	125,000	125,000	100	87
MISCELLANEOUS					
Wilder Steamship Company	500,000	5,000	500,000	100	100
Inter-Island Steam Nav. Co.	600,000	6,000	600,000	100	100
Hawaiian Electric Company	300,000	3,000	300,000	100	110
Honolulu R. T. & Land Co.	250,000	2,500	250,000	100	90
Mutual Telephone Company	150,000	13,900	139,000	10	8
Oahu Railway & Land Co	4,000,000	40,000	4,000,000	100	95
People's Ice & Refrig. Co.	150,000	1,500	150,000	100	.....
BANKS					
First National Bank	500,000	5,000	500,000	100	.....
First Am. Sav. B. & Trust Co.	250,000	2,500	250,000	100	.....
BONDS	Amt. of Issue				
Hawaiian Govt. 5 per cent	1,251,200	Dec. 31, 1900	.....	.....	96
Hilo Railroad Co., 6 per cent	450,000	.....	.....	.....	100
Hilo R. R. Co., 6 per cent	150,000	.....	.....	.....	.....
Hono. R. T. & L. Co, 6 p. c.	300,000	.....	.....	.....	.....
Ewa Plantation 6 per cent	500,000	.....	.....	.....	101½
Oahu Railway & L'd Co. 6 p. c.	2,000,000	.....	.....	.....	104½
Oahu Plantation 6 per cent.	750,000	.....	.....	.....	100
Olaa Plantation 6 per cent	1,250,000	.....	.....	.....	.....
Waialua Agr. 6 per cent	1,000,000	.....	.....	.....	102¼

PLANTATION DIRECTORY.

Island and Name.		Manager.	Post Office
OAHU.			
EwaPlantation Co	*	G. F. Renton	Honouliuli
Waianae Sugar Co. Ltd	***	Fred Meyer	Waianai
Waialua Agricultural Co	*	W. W. Goodale	Waialua
Kahuku Plantation Co	xx	Andrew Adams	Kahuku
Waimanalo Sugar Co	**	G. C. Chalmers	Waimanalo
Oahu Plantation Co	x	Aug. Ahrens	Waipahu
Honolulu Sugar Co	**	J. A. Low	Aiea
Heeia Agricultural Co. Ltd	*x*	W. W. McGowan	Heeia
Laie Plantation	x*x	S. E. Wooley	Laie
MAUI.			
Olowalu Sugas Co	**	E. Kruse	Lahaina
Pioneer Mill Co	x	L. Barckausen	Lahaina
Wailuku Sugar Co	**x	C. B. Wells	Wailuku
Hawaiian Commercial & Sugar Co	x*	W. J. Lowrie	Spreckiesville
Paia Plantation	x"	D. C. Lindsay	Paia
Haiku Sugar Co	x*	H. A. Baldwin	Hamakuapoko
Hana Plantation	xx	K. S. Gjerdrum	Hana
Hamoa Plantation	*'x	J. R. Myers	Hamoa
Kipahulu Sugar Co	x	A. Gross	Kipahulu
Kihei Plantation	x*	W. F. Pogue	Kihei
Maui Sugar Co	‡	W. S. Akana	Huelo
HAWAII.			
Paauhau Plantation	**	Jas. Gibb	Honokaa
Hamakua Mill Co	*x	A. Lidgate	Paauilo
Kukaiau Plantation	x	J. M. Horner	Paauilo
Kukaiau Mill Co	*x	E. Madden	Paauilo
Ookala Sugar Co	o*x	W. G. Walker	Ookala
Laupahoehoe Sugar Co	*x	C. McLennan	Papaaloa
Hakalau Plantation	**	Geo. Ross.	Hakalau
Honomu Sugar Co	**x	Wm. Pullar	Honomu
Pepeekeo Sugar Co	*x	H. Deacon	Pepeekeo
Onomea Sugar Co	**x	J. T. Moir	Papaikou
Hilo Sugar Co	**	J. A. Scott	Hilo
Hawaii Mill Co	x	W. von Graevemeyer	Hilo
Waiakea Mill Co	*x	C. C. Kennedy	Hilo
Hawaiian Agricultural Co	*'x	C. M. Walton	Pahala
Hutchinson Sugar Plantation Co	**	G. C. Hewitt	Naalehu
Union Mill Co	*x	Jas. Renton	Kohala
Kohala Sugar Co	*	E. E. Olding	Kohala
Pacific Sugar Mill	x**	D. Forbes	Kukuihaele
Honokaa Sugar Co	x**	Jno. Watt	Honokaa
Kona Sugar Co	xxx	J. Cowan	Holualoa
Olaa Sugar Co	xx*	F. B. McStocker	Olaa
Puna Sugar Co	xx*	W. H. Campbell	Kapoho
Halawa Plantation	x*x	T. S Kay	Kohala
C. F. Hart, (Niulii)	*x	R. Hall	Kohala
Hawi Mill & Plantation	†‡	John Hind	Kohala
KAUAI.			
Kilauea Sugar Co	**	G. R. Ewart	Kilauea
Gay & Robinson	x*x	Gay & Robinson	Makaweli
Makee Sugar Co	**x	G. H. Fairchild	Kealia
Grove Farm Plantation	x	G. N. Wilcox	Lihue
Lihue Plantation Co	x	F. Weber	Lihue
Koloa Sugar Co	x	P. McLain	Koloa
McBryde Sugar Co	*x	W. Stodart	Eleele
Hawaiian Sugar Co	x*	W. A. Baldwin	Makaweli
Waimea Sugar Mill Co	*	J. Fassoth	Waimea
Kekaha Sugar Co	x	H. B. Faye	Kekaha

Key	Honolulu Agents	
*	Castle & Cooke	(4)
**	W. G. Irwin & Co	(8)
***	J. M. Dowsett	(1)
x	H. Hackfeld & Co	(9)
xx	M. S. Grinbaum & Co	(2)
xxx	McChesney & Sons	(1)
*x	T. H. Davies & Co	(8)
**x	C Brewer & Co	(7)
x*	Alexander & Baldwin	(5)
x**	F. A. Schæfer & Co.	(2)
xx*	B. F. Dillingham & Co	(2)
x*x	H. Waterhouse & Co	(3)
x	C. Bolte	(1)
‡	Wong Kwai	(1)
†‡	Hind, Rolph & Co	(1)